BRUHAT BANGALORE MAHANAGARA PALIKE
BYATARAYANAPURA DIVISION

Name of Work: Package 4 Includes 3 Works Rs.100.00lakhs

1ST& FINAL BILL

TEST REPORTS

TEJUS CONSULTANTS
CONSULTING ENGINEERS AND DESIGNERS
No.58 MIG, 6th Cross, 3rd Main
1st Stage, Basaveshwaranagar
Bangalore-560079
☎ 080 - 23287532
email: tejusconsultants@gmail.com

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CONSULTANTS

No. TC / BBMP / BYT-PMC / 406 / 19-20

Date:

To
The Executive Engineer
Byatarayanapura Division
Bruhat Bangalore Mahanagara Palike
Bangalore – 560 092

Dear Sir

Sub: Package 4 includes 3 Works Rs100.00lakhs

In reference to the above subject, this is to bring to your kind notice that we have scrutinized the **First and Final bill** submitted by **Sri m.Prakash, No 136, Kashinagara Main Road, Amruthahalli, Banaglore-560092** towards the above said work and arrived at an amount of **Rs 94,59,730(Rupees Ninety Four lakh Nine Thousand Seven Hundred Thirty Only)** the work has been completed satisfactorily.

This is for your kind information.

Thank you and assuring you the best of our Services at all the times

For Tejus Consultants
(Nischal M)

AE ward No 6

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TEJUS

Name of Work	:	Asphalting to Roads and improvements to drain at Saraipalya Sawmill road Left side Cross road in Ward No.6 Byatarayanapura Subdivision.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prakash
Date of Testing	:	20-11-2019
Type of Mix	:	WMM
Sample I/D	:	WMM 2

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	Date of Sampling:	20-11-2019
		Date of testing:	20-11-2019
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	355	355	3.55	96.45	95-100
22.4	2148	2503	25.03	74.97	60-80
11.2	2152	4655	46.55	53.45	40-60
4.75	1998.0	6653	66.53	33.47	25-40
2.36	1564.0	8217	82.17	17.83	15-30
0.6	424.0	8641	86.41	13.59	8.0-22.0
0.075	803.0	9444	94.44	5.56	0-8
Pan	556.0	10000			
Total	10000.0				

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Name of Work	:	Asphalting to Roads and improvements to drain at Saraipalya Sawmill road Left side Cross road in Ward No.6 Byatarayanapura Subdivision.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prakash
Date of Testing	:	20-11-2019
Type of Mix	:	WMM
Sample I/D	:	WMM 2

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	**Date of Sampling:**	20-11-2019
		Date of testing:	20-11-2019
Type of material & Purpose:	WMM	**Oven Dry Wt.(gms):**	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	396	396	3.96	96.04	95-100
22.4	1982	2378	23.78	76.22	60-80
11.2	2263	4641	46.41	53.59	40-60
4.75	2129.0	6770	67.70	32.30	25-40
2.36	1158.0	7928	79.28	20.72	15-30
0.6	423.0	8351	83.51	16.49	8.0-22.0
0.075	990.0	9341	93.41	6.59	0-8
Pan	659.0	10000			
Total	10000.0				

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Name of Work	:	Asphalting to Roads and improvements to drain at Saraipalya Sawmill road Left side Cross road in Ward No.6 Byatarayanapura Subdivision.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prakash
Date of Testing	:	20-11-2019
Type of Mix	:	WMM
Sample I/D	:	WMM 2

GRADATION FOR WMM

(As per MORT&H 400-11)

Sample Location:	At plant	Date of Sampling:	20-11-2019
		Date of testing:	20-11-2019
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	397	397	3.97	96.03	95-100
22.4	1985	2382	23.82	76.18	60-80
11.2	2263	4645	46.45	53.55	40-60
4.75	2133.0	6778	67.78	32.22	25-40
2.36	1154.0	7932	79.32	20.68	15-30
0.6	423.0	8355	83.55	16.45	8.0-22.0
0.075	985.0	9340	93.40	6.60	0-8
Pan	660.0	10000			
Total	10000.0				

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Project	Asphalting to Roads and improvements to drain at Sarapalya Sawmill road Left side Cross road in Ward No.6
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

FLAKINESS AND ELONGATION INDICES (IS 2386, PART I)

Type of Material	WMM		**Proposed Use**	**WMM**
Sample Location	At plant		**Date of Sampling**	**20-11-2019**
			Date of Testing	**20-11-2019**

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	610	82	528	75
16.0	12.5	1121	120	1001	114
12.5	10.0	775	62	713	60
10.0	6.3	615	55	560	44
Total		**3121**	**319**	**2802**	**293**

Note: Minimum 200 Pcs should be taken on each fraction of test

		Flakiness Index(%)	10.22		
		Elongation Index(%)	10.46		
		Combined FI+EI (%)	20.68		

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Project	Asphalting to Roads and improvements to drain at Saraipalya Sawmill road Left side Cross road in Ward No.6 Byatarayanapura Subdivision.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	20-11-2019
Sample Location	At plant	**Date of Testing**	20-11-2019

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	348.00	359.00	331.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	273.00	276.00	258.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	75.00	83.00	73.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	21.55	23.12	22.05	
5	Average Aggregate impact value	(%)	22.24			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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Test Report on Cement

Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M Prakash
Sample ID	Cement
Date of Sample Tested	20-11-2019
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	36 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	384	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	5mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	27.00%	

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TEST REPORT					
Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision				
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore				
Contractor	M Prakash				
Total Weight in gr	3000				

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	P.C.C
Sample Location	At Site			Date of Sampling	20-11-2019
				Date of Testing	20-11-2019
IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	97	97	3.23	96.77	95-100
20.00mm	1472	1569	52.30	47.70	30-70
10.00mm	628	2197	73.23	26.77	10-35
4.75mm	724	2921	97.37	2.63	0-5
Pan	79	3000	100.00	0.00	

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT	
Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

SPECIFIC GRAVITY AND WATER ABSORPTION
FINE AGGREGATE (IS-2386-PART-3)

Type of Material	**Sand/M sand**	**Proposed Use**	P.C.C
Location/Source	**At Plant/site**	**Date of Sampling**	20-11-2019
Period of Soaking	**24 hours**	**Date of Testing**	20-11-2019

Sl. No.	Test Property		TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.		680	682	680	
B	Weight of oven - dry sample gm.		671	675	673	
C	Weight of Pycnometer Filled with water gm		1275	1275	1275	
D	Weight of Pycnometer + sample + water gm		1698	1698	1704	
E	Bulk specific gravity	B	2.611	2.606	2.681	**2.633**
		(C + A - D)				
G	Absorption (%)	(A - B) *100	0.341	1.037	1.040	**1.139**
		B				

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TEST REPORT	
Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	**Fine aggregate (River Sand/M sand)**		**Proposed Use**	P.C.C	
Sample Location	At Plant/site		**Date of Sampling**	20-11-2019	
			Date of Testing	20-11-2019	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing (Zone-II)**
10.00 mm	0	0	0	100.00	**100**
4.75 mm	238	238	7.93	92.07	**90 - 100**
2.36 mm	282	520	17.33	82.67	**75 - 100**
1.18 mm	524	1044	34.80	65.20	**55 - 90**
0.600 mm	458	1502	50.07	49.93	**35 -59**
0.300 mm	650	2152	71.73	28.27	**8-30**
0.150 mm	615	2767	92.23	7.77	**0 - 10**
Pan	233	3000			**-**
Remarks :	✓ Satisfactory / Not Satisfactory				

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Consultant's Representative

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TEST REPORT	
Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	**Fine aggregate (River Sand/M sand)**		**Proposed Use**	P.C.C	
Sample Location	At Plant/site		**Date of Sampling**	20-11-2019	
			Date of Testing	20-11-2019	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing (Zone-II)**
10.00 mm	0	0	0	100.00	**100**
4.75 mm	238	238	7.93	92.07	**90 - 100**
2.36 mm	282	520	17.33	82.67	**75 - 100**
1.18 mm	524	1044	34.80	65.20	**55 - 90**
0.600 mm	458	1502	50.07	49.93	**35 -59**
0.300 mm	650	2152	71.73	28.27	**8-30**
0.150 mm	615	2767	92.23	7.77	**0 - 10**
Pan	233	3000			**-**
Remarks :	✓ Satisfactory / Not Satisfactory				

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NABL ACCREDITED AS PER ISO/IEC 17025:2017

Job No.: CECTC/MP/QC/2019-20 Date: 20.11.2019

TEST RESULTS OF PHYSICAL PROPERTIES OF REINFORCEMENT STEEL

Client : **Bruhath Bangalore Mahanagara Palike,** Bangalore.
Contractor : **Sri. M. Prakash,** Contractor, Bangalore.
Name of Project : Package 4 Includes 3 Works Rs. 100.00 Lakhs.
Sample Identification : 8mm, 10mm Fe 500 TMT Bars
Technical Reference : IS 1786:2008, IS 1608:2005, IS 1599:1985 (Reaffirmed 2006)
Date of test: : 20.11.2019

SlNo	Nominal size (dia in mm)	Mass per metre (kg/metre)	TENSILE STRENGTH		
			0.20 % proof stress/ yield stress ($N/mm^{2)}$	Tensile strength ($N/mm^{2)}$	Elongation, percent on gauge length
1	8	0.398	534	578	15
2	10	0.620	547	592	16

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 15 days from the date of testing.

For Civil Experts
Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.

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TEST REPORT					
Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision				
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore				
Contractor	M Prakash				
Total Weight:	10000	gms			
SIEVE ANALYSIS					
Type of Material	20 mm down size		**Proposed Use**	Concrete	
Sample Location	At Plant		**Date of Sampling**	25-11-2019	
			Date of Testing	25-11-2019	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing**
40.00 mm	0	0	0	100	**100**
20.00 mm	273	273	2.73	97.27	**95 - 100**
10.00 mm	4657	4930	49.30	50.70	**25 - 55**
4.75 mm	4528	9458	94.58	5.42	**0 - 10**
Pan	542	10000			
Remarks :	✓ Satisfactory / Not Satisfactory				

Consultant's Representative

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision	
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	M Prakash	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	**12.5 mm down size**	**Proposed Use**	Concrete
Sample Location	Plant	**Date of Sampling**	25-11-2019
		Date of Testing	25-11-2019

IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	582	582	5.82	94.18	90-100
10.0	3338	3920	39.20	60.80	40-85
4.75	5428	9348	93.48	6.52	0-10
Pan	652	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT	
Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Materia	Fine aggregate (River Sand/M sand)		Proposed Use	Concrete	
Sample Location	At Plant/site		Date of Sampling	25-11-2019	
			Date of Testing	25-11-2019	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	232	232	7.73	92.27	90 - 100
2.36 mm	278	510	17.00	83.00	75 - 100
1.18 mm	520	1030	34.33	65.67	55 - 90
0.600 mm	548	1578	52.60	47.40	35 -59
0.300 mm	655	2233	74.43	25.57	8-30
0.150 mm	515	2748	91.60	8.40	0 - 10
Pan	252	3000			-
Remarks :			✓ Satisfactory / Not Satisfactory		

Consultant's Representative

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Sand/M sand	**Proposed Use**	Concrete
Location/Source	At Plant/site	**Date of Sampling**	25-11-2019
Period of Soaking	24 hours	**Date of Testing**	25-11-2019

Sl. No.	Test Property		TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.		655	662	670	
B	Weight of oven - dry sample gm.		648	653	661	
C	Weight of Pycnometer Filled with water gm		1275	1275	1275	
D	Weight of Pycnometer + sample + water gm		1693	1691	1692	
E	Bulk specific gravity	B	2.734	2.654	2.613	2.667
		(C + A - D)				
G	Absorption (%)	(A - B) *100	1.080	1.378	1.362	1.273
		B				

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Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M Prakash
Location:	Cement
Grade of concrete:	M15
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	25-11-2019	2/12/2019	7 days	8.825	22500	221	9.82	9.78
2	25-11-2019	2/12/2019	7 days	8.852	22500	219	9.73	
3	25-11-2019	2/12/2019	7 days	8.732	22500	220	9.78	

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Test Report on Compressive Strength of Concrete Cubes

Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M Prakash
Location:	Cement
Grade of concrete:	M15
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	25-11-2019	23-12-2019	28 days	8.582	22500	451	20.04	20.13
2	25-11-2019	23-12-2019	28 days	8.652	22500	455	20.22	
3	25-11-2019	23-12-2019	28 days	8.782	22500	453	20.13	

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Test Report on Cement

Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M Prakash
Sample ID	Cement
Date of Sample Tested	25-11-2019
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	38 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	385	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	5mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	27.00%	

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Project	Asphalting to Roads and improvements to drain at Saraipalya Sawmill road Left side Cross road in Ward No.6 Byatarayanapura Subdivision.		
Client	Bruhat Bengaluru Mahanagara Palike		
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore		
Contractor	M Prakash		
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)			
		Date:	26-11-2019
Layer no. or level	WMM I layer		
Depth of hole	250mm		
Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6212	6214	6223
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9710	9711	9712
Wt. of sand in cone (w3) gms.	833	838	843
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3457	3451	3445
Bulk density of sand (γs)gm/cc	1.32	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.37	2.38	2.37
Moisture meter reading(moisture content)	12.20	12.20	12.20
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.11	2.12	2.11
MDD	2.14	2.14	2.14
OMC	13.50%	13.50%	13.50%
% compaction obtained	98.79	98.99	98.55
% compaction required	98%	98%	98%

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Project	Asphalting to Roads and improvements to drain at Saraipalya Sawmill road Left side Cross road in Ward No 6 Byatarayanapura Subdivision.		
Client	Bruhat Bengaluru Mahanagara Palike		
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore		
Contractor	M Prakash		
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)			
		Date:	26-11-2019
Layer no. or level	WMM I layer		
Depth of hole	250mm		
Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6194	6210	6223
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9708	9703	9706
Wt. of sand in cone (w3) gms	844	847	844
Wt. of sand in hole (w4)=(w1-w2-w3) gms	3448	3450	3450
Bulk density of sand (γs)gm/cc	1.32	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.37	2.38	2.36
Moisture meter reading(moisture content)	12.20	12.20	12.20
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.11	2.12	2.11
MDD	2.14	2.14	2.14
OMC	13.50%	13.50%	13.50%
% compaction obtained	98.76	98.96	98.41
% compaction required	98%	98%	98%

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Project	Asphalting to Roads and improvements to drain at Saraipalya Sawmill road Left side Cross road in Ward No 6 Byatarayanapura Subdivision		
Client	Bruhat Bengaluru Mahanagara Palike		
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore		
Contractor	M Prakash		
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)			
		Date:	26-11-2019
Layer no. or level	WMM I layer		
Depth of hole	250mm		
Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6186	6175	6238
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9722	9714	9708
Wt. of sand in cone (w3) gms.	842	855	850
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3436	3431	3442
Bulk density of sand (γs)gm/cc	1.32	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.38	2.38	2.37
Moisture meter reading(moisture content)	12.20	12.20	12.20
Result			
FDD(Wt of the dry material)=(100γb/100+mc)gm/cc	2.12	2.12	2.12
MDD	2.14	2.14	2.14
OMC	13.50%	13.50%	13.50%
% compaction obtained	98.97	98.94	98.88
% compaction required	98%	98%	98%

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Name of Work	:	Asphalting to Roads and improvements to drain at Saraipalya Sawmill road Left side Cross road in Ward No.6 Byatarayanapura Subdivision.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prakash
Date of Testing	:	29/11/2019
Type of Mix	:	BC
Sample I/D	:	BC2

GRADATION FOR BC
(As per MORT&H 500-18,Grading-2)

Sample Location:	At plant	Date of Sampling:	29/11/2019
		Date of testing:	29/11/2019
Type of material & Purpose:	BC	Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19	0	0	0.00	100.00	100.00
13.20	95	95.0	7.92	92.08	79 - 100
9.50	122	217.0	18.08	81.92	71 - 95
4.75	234	451.0	37.58	62.42	53 - 71
2.360	182	633.0	52.75	47.25	42 - 58
1.180	98	731.0	60.92	39.08	34 - 48
0.600	112	843.0	70.25	29.75	26 - 38
0.300	88	931.0	77.58	22.42	18 - 28
0.150	62	993.0	82.75	17.25	12 - 20
0.075	110	1103.0	91.92	8.08	4 - 10
Pan	97.0	1200.0			
Total	1200.0				

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work	:	Asphalting to Roads and improvements to drain at Saraipalya Sawmill road Left side Cross road in Ward No.6 Byatarayanapura Subdivision.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prakash
Date of Testing	:	29-11-2019
Type of Mix	:	BC
Sample I/D	:	BC2

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	930	912
2. Weight of Mixture after extraction, g	878	860
3. Weight of Bitumen	52	52
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	54.10	53.85
8. Bitumen content in %	5.82	5.90
9. Average Bitumen content in %	**5.86**	
10. Minimum Bitumen content in %	**5.80**	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-18,Grading-2)

Sample Location:	At site	Date of Sampling:	29-11-2019
		Date of testing:	29-11-2019
Type of material & Purpose:	BC	Oven Dry Wt.(gms):	878.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	91	91.0	10.36	89.64	79 - 100
9.50	120	211.0	24.03	75.97	71 - 95
4.75	86	297.0	33.83	66.17	53 - 71
2.360	154	451.0	51.37	48.63	42 - 58
1.180	100	551.0	62.76	37.24	34 - 48
0.600	82	633.0	72.10	27.90	26 - 38
0.300	66	699.0	79.61	20.39	18 - 28
0.150	45	744.0	84.74	15.26	12 - 20
0.075	69	813.0	92.60	7.40	4 - 10
Pan	65.0	878.0			
Total	878.0				

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Consultant's Representative

TEJUS CONSULTANTS
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Project	Asphalting to Roads and improvements to drain at Saraipalya Sawmill road Left side Cross road in Ward No.6 Byatarayanapura Subdivision.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	BC		Proposed Use	BC
Sample Location	At plant		Date of Sampling	29-11-2019
			Date of Testing	29-11-2019

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	956	84	872	65
16.0	12.5	1312	117	1195	121
12.5	10.0	528	75	453	54
10.0	6.3	502	64	438	72
Total		3298	340	2958	312

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.31
Elongation Index(%):	10.55
Combined FI+EL (%)	20.86

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Project	Asphalting to Roads and improvements to drain at Saraipalya Sawmill road Left side Cross road in Ward No.6 Byatarayanapura Subdivision.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	BC	**Date of Sampling**	**29-11-2019**
Sample Location	At plant	**Date of Testing**	**29-11-2019**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	352.00	342.00	386.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	268.00	256.00	298.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	84.00	86.00	88.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	23.86	25.15	22.80	
5	Average Aggregate impact value	(%)	23.94			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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Name of Work	:	Asphalting to Roads and improvements to drain at Saraipalya Sawmill road Left side Cross road in Ward No.6 Byatarayanapura Subdivision.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prakash
Date of Testing	:	29-11-2019
Type of Mix	:	Tack coat
Sample I/D	:	3

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	**Unit**	**Test No**	
		1	**2**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.090	0.090
Initial Wt of empty Plate (b)	Kg	0.752	0.755
Final weight of plate after application of tack Coat (c)	Kg	0.775	0.778
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	**0.250 to 0.30 Kg/sq.m**	

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PRECAST SLAB (CORE) TEST REPORT

	:	Bruhat Bangalore Mahanagara Palike
actor	:	M Prakash
of Work	:	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Sub division.
Sample Tested	:	3
f Testing	:	29-11-2019
ical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
of Concrete	:	M_{20} - 250mm Thick

Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
100.00	180.00	3.482	2463.01	1.80	0.960	158.18	20.14	21.75	20.88	26.10
100.00	180.00	3.510	2482.82	1.80	0.960	159.10	20.26	21.88	21.00	26.25
100.00	180.00	3.500	2475.74	1.80	0.960	158.23	20.15	21.76	20.89	26.11

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results indicated above are based on the tests carried out on the samples received in the laboratory.
Query regarding the report must be reported reported within 15 days from the date of testing.

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Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Proposed Use	WMM	Date of Sampling	1/12/2019
Sample Location	At plant	Date of Testing	1/12/2019

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	346.00	355.00	328.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	268.00	274.00	254.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	78.00	81.00	74.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	22.54	22.82	22.56	
5	Average Aggregate impact value	(%)	22.64			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

Consultant's Representative

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ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

29.12.19
ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-24

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Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM		Proposed Use	WMM
Sample Location	At plant		Date of Sampling	1-12-2019
			Date of Testing	1-12-2019

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	614	80	534	72
16.0	12.5	1125	122	1003	114
12.5	10.0	775	59	716	60
10.0	6.3	609	58	551	45
Total		3123	319	2804	291

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.21
Elongation Index(%):	10.38
Combined FI+EL (%)	20.59

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Name of Work	:	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prakash
Date of Testing	:	01-12-2019
Type of Mix	:	WMM
Sample I/D	:	WMM 2

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	Date of Sampling:	01-12-2019
		Date of testing:	01-12-2019
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	398	398	3.98	96.02	95-100
22.4	2401	2799	27.99	72.01	60-80
11.2	2512	5311	53.11	46.89	40-60
4.75	1417.0	6728	67.28	32.72	25-40
2.36	795.0	7523	75.23	24.77	15-30
0.6	802.0	8325	83.25	16.75	8.0-22.0
0.075	980.0	9305	93.05	6.95	0-8
Pan	695.0	10000			
Total	10000.0				

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Name of Work	:	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prakash
Date of Testing	:	01-12-2019
Type of Mix	:	WMM
Sample I/D	:	WMM 2

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	Date of Sampling:	01-12-2019
		Date of testing:	01-12-2019
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	302	302	3.02	96.98	95-100
22.4	2504	2806	28.06	71.94	60-80
11.2	2604	5410	54.10	45.90	40-60
4.75	1248.0	6658	66.58	33.42	25-40
2.36	803.0	7461	74.61	25.39	15-30
0.6	604.0	8065	80.65	19.35	8.0-22.0
0.075	1298.0	9363	93.63	6.37	0-8
Pan	637.0	10000			
Total	10000.0				

Consultant's Representative

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ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No 6 Byatarayanapura Subdivision
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

		Date:	05-12-2019
Layer no. or level	WMM I layer		
Depth of hole	250mm		
Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6223	6233	6197
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9712	9722	9731
Wt. of sand in cone (w3) gms.	836	831	840
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3452	3447	3429
Bulk density of sand (γs)gm/cc	1.31	1.31	1.31
Bulk density of material(i e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.36	2.37	2.37
Moisture meter reading(moisture content)	12.10	12.10	12.10
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.11	2.11	2.11
MDD	2.14	2.14	2.14
OMC	13.50%	13.50%	13.50%
% compaction obtained	98.44	98.74	98.69
% compaction required	98%	98%	98%

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Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

		Date:	**05-12-2019**
Layer no. or level	WMM I layer		
Depth of hole	250mm		
Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6152	6156	6212
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9716	9720	9702
Wt. of sand in cone (w3) gms.	852	855	850
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3432	3425	3448
Bulk density of sand (γs)gm/cc	1.32	1.32	1.31
Bulk density of material(i e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.37	2.37	2.36
Moisture meter reading(moisture content)	12.20	12.20	12.20
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.11	2.11	2.10
MDD	2.14	2.14	2.14
OMC	13.50%	13.50%	13.50%
% compaction obtained	98.55	98.81	98.29
% compaction required	98%	98%	98%

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29.12.19
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Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No 6 Byatarayanapura Subdivision
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

		Date:	05-12-2019
Layer no. or level	WMM I layer		
Depth of hole	250mm		
Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6228	6235	6135
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9712	9716	9743
Wt. of sand in cone (w3) gms.	840	835	845
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3448	3449	3412
Bulk density of sand (γs)gm/cc	1.31	1.31	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.37	2.37	2.36
Moisture meter reading(moisture content)	12.10	12.10	12.10
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc			
MDD	2.11	2.11	2.10
OMC	2.14	2.14	2.14
% compaction obtained	13.50%	13.50%	13.50%
% compaction required	98.64	98.72	98.19
	98%	98%	98%

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work	:	Improvements to drain and asphaltng to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prskash
Date of Testing	:	10-12-2019
Type of Mix	:	BC
Sample I/D	:	BC3

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	935	937
2. Weight of Mixture after extraction, g	883	884
3. Weight of Bitumen	52	53
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	54.10	54.85
8. Bitumen content in %	5.79	5.85
9. Average Bitumen content in %	**5.82**	
10. Minimum Bitumen content in %	**5.80**	

GRADATION FOR BC AFTER EXTRACTION

(As per MORT&H 500-18,Grading-2)

Sample Location:	At site	Date of Sampling:	10-12-2019
		Date of testing:	10-12-2019
Type of material & Purpose:	BC	Oven Dry Wt (gms):	883.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	87	87	9.85	90.15	79 - 100
9.50	122	209	23.67	76.33	71 - 95
4.75	87	296	33.52	66.48	53 - 71
2.360	142	438	49.60	50.40	42 - 58
1.180	70	508	57.53	42.47	34 - 48
0.600	50	558	63.19	36.81	26 - 38
0.300	100	658	74.52	25.48	18 - 28
0.150	100	758	85.84	14.16	12 - 20
0.075	72	830	94.00	6.00	4 - 10
Pan	53	883			
Total	883				

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Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	BC	**Date of Sampling**	**10-12-2019**
Sample Location	At plant	**Date of Testing**	**10-12-2019**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	365.00	362.00	373.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	282.00	269.00	292.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	83.00	93.00	81.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	22.74	25.69	21.72	
5	Average Aggregate impact value	(%)	23.38			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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Name of Work	:	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prakash
Date of Testing	:	10-12-2019
Type of Mix	:	BC
Sample I/D	:	BC2

GRADATION FOR BC
(As per MORT&H 500-18,Grading-2)

Sample Location:	At plant	Date of Sampling:	10-12-2019
		Date of testing:	10-12-2019
Type of material & Purpose:	BC	Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19	0	0	0.00	100.00	100.00
13.20	89	89.0	7.42	92.58	79 - 100
9.50	121	210.0	17.50	82.50	71 - 95
4.75	232	442.0	36.83	63.17	53 - 71
2.360	184	626.0	52.17	47.83	42 - 58
1.180	102	728.0	60.67	39.33	34 - 48
0.600	114	842.0	70.17	29.83	26 - 38
0.300	92	934.0	77.83	22.17	18 - 28
0.150	63	997.0	83.08	16.92	12 - 20
0.075	114	1111.0	92.58	7.42	4 - 10
Pan	89.0	1200.0			
Total	1200.0				

Consultant's Representative

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Test Report on Cement

Project	Providing Asphalting road and drains at Sarakipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M Prakash
Sample ID	Cement
Date of Sample Tested	26-12-2019
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	34 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	390	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	6mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	27.00%	

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TEST REPORT					
Clients	Bruhat Bangalore Mahanagara Palike				
Project	Providing Asphalting road and drains at Sarnipalya Munimagappa layout in Ward No 6 Byatarayanapura Subdivision				
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore				
Contractor	M Prakash				
Total Weight in g	3000				

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	At Site			Date of Sampling	26-12-2019
				Date of Testing	26-12-2019
IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	94	94	3.13	96.87	95-100
20.00mm	1464	1558	51.93	48.07	30-70
10.00mm	628	2186	72.87	27.13	10-35
4.75mm	724	2910	97.00	3.00	0-5
Pan	90	3000	100.00	0.00	

Remarks : ✓ Satisfactory / Not Satisfactory

Consultant's Representative

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

SPECIFIC GRAVITY AND WATER ABSORPTION
FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Sand/M sand	Proposed Use	P.C.C
Location/Source	At Plant/site	Date of Sampling	26-12-2019
Period of Soaking	24 hours	Date of Testing	26-12-2019

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	683	691	692	
B	Weight of oven - dry sample gm.	674	684	685	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1698	1698	1706	
E	Bulk specific gravity B / (C + A - D)	2.592	2.552	2.625	2.590
G	Absorption (%) (A - B) *100 / B	1.335	1.023	1.022	1.127

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TEST REPORT	
Clients	Bruhat Bangalore Mahanagara Palike
Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate (River Sand/M sand)		Proposed Use	P.C.C	
Sample Location	At Plant/site		Date of Sampling	26-12-2019	
			Date of Testing	26-12-2019	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	242	242	8.07	91.93	90 - 100
2.36 mm	282	524	17.47	82.53	75 - 100
1.18 mm	520	1044	34.80	65.20	55 - 90
0.600 mm	482	1526	50.87	49.13	35 -59
0.300 mm	624	2150	71.67	28.33	8-30
0.150 mm	608	2758	91.93	8.07	0 - 10
Pan	242	3000			-
Remarks :	✓ Satisfactory / Not Satisfactory				

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Project	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	BC		Proposed Use	BC
Sample Location	At plant		Date of Sampling	10-12-2019
			Date of Testing	10-12-2019

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	952	86	866	64
16.0	12.5	1308	115	1193	118
12.5	10.0	508	76	432	62
10.0	6.3	492	54	438	67
Total		3260	331	2929	311

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.15
Elongation Index(%):	10.62
Combined FI+EL (%)	20.77

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Name of Work	:	Improvements to drain and asphalting to roads at Goldentreat layout near Anam Enclave layout in Ward No.6 Byatarayanapura Subdivision	
Client	:	Bruhat Bengaluru Mahanagara Palike	
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	:	M Prakash	
Date of Testing	:	10/12/2019	
Type of Mix	:	Tack coat	
Sample I/D	:	2	
Determination	**Unit**	**Test No**	
		1	**2**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.795	0.784
Final weight of plate after application of tack Coat (c)	Kg	0.818	0.807
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

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TEST REPORT

Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision		
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore		
Contractor	M Prakash		
Total Weight:	10000	gms	

SIEVE ANALYSIS

Type of Material	20 mm down size		Proposed Use	Concrete	
Sample Location	At Plant		Date of Sampling	30-12-2019	
			Date of Testing	30-12-2019	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
40.00 mm	0	0	0	100	100
20.00 mm	265	265	2.65	97.35	95 - 100
10.00 mm	4986	5251	52.51	47.49	25 - 55
4.75 mm	4324	9575	95.75	4.25	0 - 10
Pan	425	10000			
Remarks :	✓ Satisfactory / Not Satisfactory				

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision	
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	M Prakash	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	12.5 mm down size		Proposed Use	Concrete	
Sample Location	Plant		Date of Sampling	30-12-2019	
			Date of Testing	30-12-2019	
IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	585	585	5.85	94.15	90-100
10.0	3355	3940	39.40	60.60	40-85
4.75	5492	9432	94.32	5.68	0-10
Pan	568	10000			
Remarks :	Satisfactory / Not Satisfactory				

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

SIEVE ANALYSIS

Total Weight:	3000	gms			
Type of Materia	Fine aggregate (River Sand/M sand)		Proposed Use	Concrete	
Sample Location	At Plant/site		Date of Sampling	30-12-2019	
			Date of Testing	30-12-2019	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	234	234	7.80	92.20	90 - 100
2.36 mm	278	512	17.07	82.93	75 - 100
1.18 mm	408	920	30.67	69.33	55 - 90
0.600 mm	575	1495	49.83	50.17	35 -59
0.300 mm	752	2247	74.90	25.10	8-30
0.150 mm	528	2775	92.50	7.50	0 - 10
Pan	225	3000			-

Remarks : Satisfactory / Not Satisfactory

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Sand/M sand	Proposed Use	Concrete
Location/Source	At Plant/site	Date of Sampling	30-12-2019
Period of Soaking	24 hours	Date of Testing	30-12-2019

Sl. No.	Test Property		TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.		632	674	675	
B	Weight of oven - dry sample gm.		620	667	668	
C	Weight of Pycnometer Filled with water gm		1275	1275	1275	
D	Weight of Pycnometer + sample + water gm		1670	1698	1698	
E	Bulk specific gravity	B	2.616	2.657	2.651	2.641
		(C + A - D)				
G	Absorption (%)	(A - B) *100	1.935	1.049	1.048	1.344
		B				

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Test Report on Compressive Strength of Concrete Cubes

Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M Prakash
Location:	Cement
Grade of concrete:	M15
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	30-12-2019	6/1/2020	7 days	8.821	22500	221	9.82	9.75
2	30-12-2020	6/1/2020	7 days	8.862	22500	218	9.69	
3	30-12-2021	6/1/2020	7 days	8.723	22500	219	9.73	

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ಸಹಾಯಕ 29.12.20
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Test Report on Compressive Strength of Concrete Cubes

Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M Prakash
Location:	Cement
Grade of concrete:	M15
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	30-12-2019	27-01-2020	28 days	8.570	22500	451	20.04	20.06
2	30-12-2019	27-01-2020	28 days	8.752	22500	453	20.13	
3	30-12-2019	27-01-2020	28 days	8.560	22500	450	20.00	

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Test Report on Cement

Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M Prakash
Sample ID	Cement
Date of Sample Tested	30-12-2019
Sample Supplied By	Agency

SLNo.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	36 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	380 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	6mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	27.00%	

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PRECAST SLAB (CORE) TEST REPORT

nt	:	Bruhat Bangalore Mahanagara Palike
tractor	:	M Prakash
ne of Work	:	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Sub division.
f Sample Tested	:	3
of Testing	:	03-01-2020
inical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
e of Concrete	:	M_{20} - 100mm thick

	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
	50.00	90.00	0.458	2591.75	1.80	0.960	38.30	19.51	21.07	20.22	25.28
	50.00	90.00	0.451	2552.14	1.80	0.960	38.42	19.57	21.13	20.29	25.36
	50.00	90.00	0.460	2603.07	1.80	0.960	38.24	19.48	21.03	20.19	25.24

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Query regarding the report must be reported reported within 15days from the date of testing.

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PRECAST SLAB (CORE) TEST REPORT

nt	:	Bruhat Bangalore Mahanagara Palike
ntractor	:	M Prakash
e of Work	:	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision
f Sample Tested	:	3
e of Testing	:	03-01-2020
hinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
de of Concrete	:	M_{20}. 250mm Thick

	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
	100.00	180.00	3.500	2475.74	1.80	0.960	158.20	20.14	21.75	20.88	26.10
	100.00	180.00	3.492	2470.08	1.80	0.960	159.10	20.26	21.88	21.00	26.25
	100.00	180.00	3.504	2478.57	1.80	0.960	158.18	20.14	21.75	20.88	26.10

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results indicated above are based on the tests carried out on the samples received in the laboratory.
Query regarding the report must be reported reported within 15 days from the date of testing.

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Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	WMM	Date of Sampling	10-1-2020
Sample Location	At plant	Date of Testing	10-1-2020

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	377.00	358.00	379.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	296.00	268.00	304.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	81.00	90.00	75.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	21.49	25.14	19.79	
5	Average Aggregate impact value	(%)	22.14			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M Prakash

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM		Proposed Use	WMM
Sample Location	At plant		Date of Sampling	10-1-2020
			Date of Testing	10-1-2020

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	600	85	515	70
16.0	12.5	1130	125	1005	118
12.5	10.0	772	54	718	58
10.0	6.3	618	52	566	40
Total		**3120**	**316**	**2804**	**286**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.13
Elongation Index(%):	10.20
Combined FI+EL (%)	20.33

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Name of Work	:	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prakash
Date of Testing	:	10-01-2020
Type of Mix	:	WMM
Sample I/D	:	WMM 2

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	Date of Sampling:	10-1-2020
		Date of testing:	10-1-2020
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	358	358	3.58	96.42	95-100
22.4	2454	2812	28.12	71.88	60-80
11.2	2668	5480	54.80	45.20	40-60
4.75	1423.0	6903	69.03	30.97	25-40
2.36	854.0	7757	77.57	22.43	15-30
0.6	921.0	8678	86.78	13.22	8.0-22.0
0.075	902.0	9580	95.80	4.20	0-8
Pan	420.0	10000			
Total	10000.0				

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Name of Work	:	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, Basaveshwar Nagar Bangalore
Contractor	:	M Prakash
Date of Testing	:	10-01-2020
Type of Mix	:	WMM
Sample I/D	:	WMM 1

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	At plant	Date of Sampling:	10-1-2020
		Date of testing:	10-1-2020
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	382	382	3.82	96.18	95-100
22.4	1897	2279	22.79	77.21	60-80
11.2	2254	4533	45.33	54.67	40-60
4.75	1995.0	6528	65.28	34.72	25-40
2.36	1396.0	7924	79.24	20.76	15-30
0.6	780.0	8704	87.04	12.96	8.0-22.0
0.075	880.0	9584	95.84	4.16	0-8
Pan	416.0	10000			
Total	10000.0				

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Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision		
Client	Bruhat Bengaluru Mahanagara Palike		
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore		
Contractor	M Prakash		
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)			
		Date:	**16-01-2020**
Layer no. or level	WMM I layer		
Depth of hole	250mm		
Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6212	6208	6201
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9703	9704	9702
Wt. of sand in cone (w3) gms.	846	848	854
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3451	3448	3444
Bulk density of sand (γs)gm/cc	1.32	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.38	2.38	2.36
Moisture meter reading(moisture content)	12.20	12.20	12.20
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.12	2.12	2.10
MDD	2.14	2.14	2.14
OMC	13.50%	13.50%	13.50%
% compaction obtained	98.96	98.98	98.23
% compaction required	98%	98%	98%

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Project	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No 6 Byatarayanapura Subdivision		
Client	Bruhat Bengaluru Mahanagara Palike		
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore		
Contractor	M Prakash		
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)			
		Date:	**16-01-2020**
Layer no. or level	WMM I layer		
Depth of hole	250mm		
Field density:	1	2	3
Wt of wet material from hole (Ww) gms	6230	6225	6210
Wt of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt of sand+cylinder after pouring (w2) gms.	9715	9728	9726
Wt of sand in cone (w3) gms	838	835	833
Wt of sand in hole (w4)=(w1-w2-w3) gms.	3447	3437	3441
Bulk density of sand (γs)gm/cc	1.31	1.31	1.31
Bulk density of material(i e wt of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.37	2.37	2.36
Moisture meter reading(moisture content)	12.10	12.10	12.10
Result			
FDD(Wt of the dry material)=(100γb/100+mc)gm/cc	2.11	2.12	2.11
MDD	2.14	2.14	2.14
OMC	13.50%	13.50%	13.50%
% compaction obtained	98.70	98.90	98.55
% compaction required	98%	98%	98%

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work	:	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prskash
Date of Testing	:	20-01-2020
Type of Mix	:	BC
Sample I/D	:	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	928	912
2. Weight of Mixture after extraction, g	876	861
3. Weight of Bitumen	52	51
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	54.10	52.85
8. Bitumen content in %	5.83	5.79
9. Average Bitumen content in %	**5.81**	
10. Minimum Bitumen content in %	**5.80**	

GRADATION FOR BC AFTER EXTRACTION

(As per MORT&H 500-18,Grading-2)

Sample Location:	At site	Date of Sampling:	20-01-2020
		Date of testing:	20-01-2020
Type of material & Purpose:	BC	Oven Dry Wt.(gms):	876.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	89	89.0	10.16	89.84	79 - 100
9.50	130	219.0	25.00	75.00	71 - 95
4.75	92	311.0	35.50	64.50	53 - 71
2.360	132	443.0	50.57	49.43	42 - 58
1.180	80	523.0	59.70	40.30	34 - 48
0.600	60	583.0	66.55	33.45	26 - 38
0.300	100	683.0	77.97	22.03	18 - 28
0.150	55	738.0	84.25	15.75	12 - 20
0.075	87	825.0	94.18	5.82	4 - 10
Pan	51.0	876.0			
Total	876.0				

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CONSULTANTS

Name of Work	:	Providing Asphalting road and drains at Saraipalya Muninagappa layout in Ward No.6 Byatarayanapura Subdivision
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M Prakash
Date of Testing	:	20-01-2020
Type of Mix	:	BC
Sample I/D	:	BC1

GRADATION FOR BC
(As per MORT&H 500-18,Grading-2)

Sample Location:	At plant	Date of Sampling:	20-01-2020
		Date of testing:	20-01-2020
Type of material & Purpose:	BC	Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	124	124.0	10.33	89.67	79 - 100
9.50	84	208.0	17.33	82.67	71 - 95
4.75	203	411.0	34.25	65.75	53 - 71
2.360	156	567.0	47.25	52.75	42 - 58
1.180	139	706.0	58.83	41.17	34 - 48
0.600	126	832.0	69.33	30.67	26 - 38
0.300	96	928.0	77.33	22.67	18 - 28
0.150	82	1010.0	84.17	15.83	12 - 20
0.075	116	1126.0	93.83	6.17	4 - 10
Pan	74.0	1200.0			
Total	1200.0				

Consultant's Representative

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Contractor	M Prakash

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	20-01-2020
		Date of Testing	20-01-2020

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63	50	0	0	0	0
50	40	0	0	0	0
40	31.5	0	0	0	0
31.5	25	0	0	0	0
25	20	0	0	0	0
20	16	950	115	835	82
16	12.5	1128	75	1053	122
12.5	10	680	80	600	56
10	6.3	585	65	520	58
Total		3343	335	3008	318

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.02
Elongation Index(%):	10.57
Combined FI+EL (%)	20.59

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AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	BC	**Date of Sampling**	**20-01-2020**
Sample Location	At plant	**Date of Testing**	**20-01-2020**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	388.00	385.00	381.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	296.00	292.00	294.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	92.00	93.00	87.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	23.71	24.16	22.83	
5	Average Aggregate impact value	(%)	23.57			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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Name of Work	:	Asphalting to Roads and improvements to drain at Saraipalya Muninagappa Layout in Ward No.6 Byatarayanapura Subdivision.	
Client	:	Bruhat Bengaluru Mahanagara Palike	
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	:	M Prakash	
Date of Testing	:	20-01-2020	
Type of Mix	:	Tack coat	
Sample I/D	:	1	
Determination	**Unit**	**Test No**	
		1	**2**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.823	0.841
Final weight of plate after application of tack Coat (c)	Kg	0.846	0.864
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

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